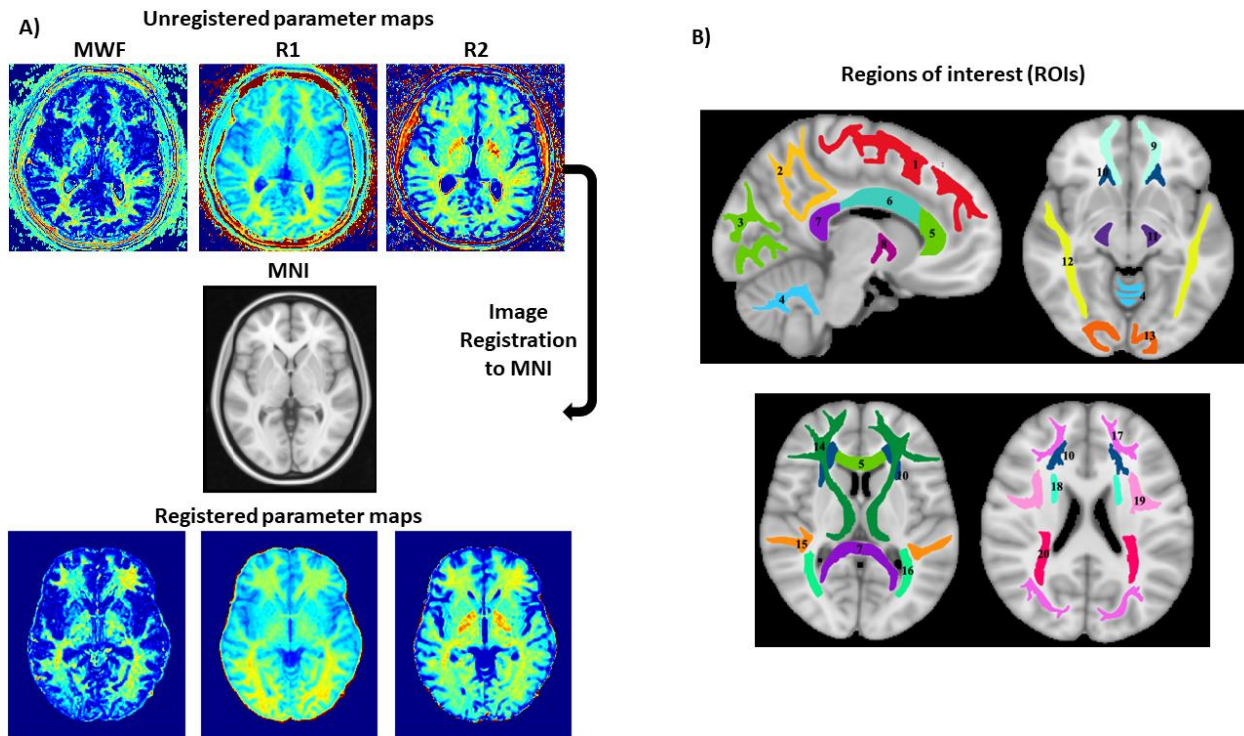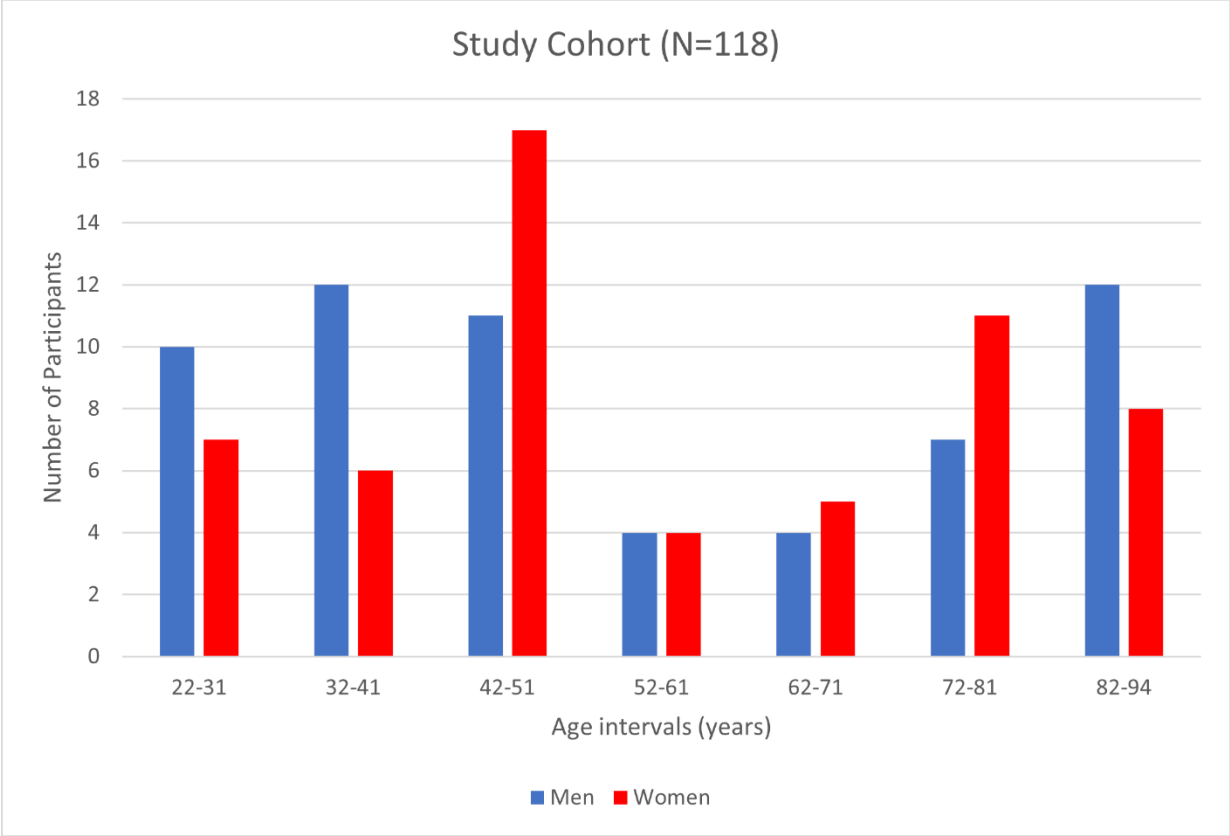**Supplemental Materials:** Lower myelin content is associated with lower gait speed in cognitively unimpaired adults

Supplemental Figure 1. A) Example of MWF, R_1 and R_2 maps' registration to the MNI space derived from the brain of an 81-year-old man. B) Visualization of the ROIs investigated.

Supplemental Figure 2. Number of participants in our study cohort ($N = 118$) per age decade and sex.

Supplemental Table 1. Regression coefficients (standard errors) and *p*-values (after FDR correction) of MWF and age, sex, race, MMSE, and BMI with respect to RGS for each of the 21 WM ROIs investigated.

ROIs	MWF					
	RGS	Age	Sex	Race	MMSE	BMI
WB	0.25*(0.09)*, **0.030**	-0.45*(0.10)*, **<0.001**	0.10*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	-0.01*(0.09)*, 0.99	-0.05*(0.08)*, 0.635
FL	0.28*(0.10)*, **0.030**	-0.43*(0.10)*, **<0.001**	0.10*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	-0.02*(0.09)*, 0.99	-0.04*(0.08)*, 0.635
OL	0.15*(0.08)*, 0.086	-0.53*(0.09)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.07*(0.08)*, 0.635
PL	0.23*(0.09)*, **0.030**	-0.46*(0.10)*, **<0.001**	0.11*(0.08)*, 0.357	-0.07*(0.06)*, 0.386	-0.00*(0.09)*, 0.99	-0.06*(0.08)*, 0.635
TL	0.19*(0.09)*, **0.042**	-0.50*(0.09)*, **<0.001**	0.10*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.06*(0.08)*, 0.635
CRB	0.18*(0.08)*, **0.042**	-0.51*(0.09)*, **<0.001**	0.09*(0.08)*, 0.357	-0.08*(0.06)*, 0.386	0.01*(0.09)*, 0.99	-0.08*(0.08)*, 0.635
BCC	0.15*(0.09)*, 0.125	-0.50*(0.10)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	-0.01*(0.09)*, 0.99	-0.07*(0.08)*, 0.635
GCC	0.15*(0.09)*, 0.110	-0.50*(0.10)*, **<0.001**	0.08*(0.08)*, 0.358	-0.05*(0.06)*, 0.388	-0.00*(0.09)*, 0.99	-0.07*(0.08)*, 0.635
SCC	0.25*(0.09)*, **0.030**	-0.47*(0.09)*, **<0.001**	0.13*(0.08)*, 0.357	-0.07*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.05*(0.08)*, 0.635
IC	0.23*(0.09)*, **0.030**	-0.46*(0.10)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	-0.01*(0.09)*, 0.99	-0.05*(0.08)*, 0.635
CP	0.12*(0.08)*, 0.134	-0.55*(0.09)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.08*(0.08)*, 0.635
ACR	0.29*(0.09)*, **0.022**	-0.43*(0.10)*, **<0.001**	0.11*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	-0.00*(0.09)*, 0.99	-0.03*(0.08)*, 0.711
PCR	0.24*(0.09)*, **0.030**	-0.45*(0.10)*, **<0.001**	0.07*(0.08)*, 0.362	-0.05*(0.06)*, 0.386	-0.02*(0.09)*, 0.99	-0.05*(0.08)*, 0.635
AThR	0.20*(0.09)*, **0.042**	-0.49*(0.09)*, **<0.001**	0.07*(0.08)*, 0.362	-0.05*(0.06)*, 0.386	-0.02*(0.09)*, 0.99	-0.06*(0.08)*, 0.635
PThR	0.21*(0.09)*, **0.042**	-0.46*(0.10)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.06*(0.08)*, 0.635
SFOF	0.34*(0.09)*, **0.010**	-0.39*(0.10)*, **<0.001**	0.07*(0.08)*, 0.362	-0.05*(0.06)*, 0.413	-0.03*(0.09)*, 0.99	-0.04*(0.07)*, 0.635
IFOF	0.16*(0.09)*, 0.095	-0.50*(0.10)*, **<0.001**	0.07*(0.08)*, 0.362	-0.06*(0.06)*, 0.386	-0.00*(0.09)*, 0.99	-0.06*(0.08)*, 0.635
SLF	0.25*(0.09)*, **0.030**	-0.46*(0.10)*, **<0.001**	0.09*(0.08)*, 0.357	-0.07*(0.06)*, 0.386	-0.02*(0.09)*, 0.99	-0.04*(0.08)*, 0.667
ILF	0.16*(0.09)*, 0.095	-0.51*(0.09)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.07*(0.08)*, 0.635
FMAJ	0.22*(0.09)*, **0.030**	-0.48*(0.09)*, **<0.001**	0.10*(0.08)*, 0.357	-0.07*(0.06)*, 0.386	0.00*(0.09)*, 0.99	-0.06*(0.08)*, 0.635
FMIN	0.24*(0.10)*, **0.030**	-0.44*(0.10)*, **<0.001**	0.09*(0.08)*, 0.357	-0.06*(0.06)*, 0.386	-0.02*(0.09)*, 0.99	-0.06*(0.08)*, 0.635

Notes. RGS, rapid gait speed; MWF, myelin water fraction; FDR, false discovery rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; BCC, body of corpus callosum; GCC, genu of corpus callosum; SCC, splenium of corpus callosum; IC, internal capsule; CP, cerebral peduncle; ACR, anterior corona radiata; PCR, posterior corona radiata; AThR, anterior thalamic radiation; PThR, posterior thalamic radiation; SFOF, superior fronto-occipital fasciculus; IFOF, inferior fronto-occipital fasciculus; SLF, superior longitudinal fasciculus; ILF, inferior longitudinal fasciculus; FMAJ, forceps major; FMIN, forceps minor.

The multiple regression model used is given by: RGS $\sim \beta_0 + \beta_{age} \times$ age $+ \beta_{MRI} \times$ MRI $+ \beta_{BMI} \times$ BMI $+ \beta_{sex} \times$ sex $+ \beta_{race} \times$ race $+ \beta_{MMSE} \times$ MMSE, where MRI corresponds to MWF. *Bold indicates statistical significance ($p < 0.05$).

Supplemental Table 2. Regression coefficients (standard errors) and *p*-values after FDR correction) of R_1 and age, sex, race, MMSE, and BMI with respect to RGS for each of the 21 WM ROIs investigated.

ROIs	R_1					
	RGS	Age	Sex	Race	MMSE	BMI
WB	0.30*(0.08)*, **0.004**	-0.48*(0.09)*, **<0.001**	0.12*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.03*(0.09)*, 0.957	-0.05*(0.07)*, 0.591
FL	0.29*(0.08)*, **0.004**	-0.48*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.03*(0.09)*, 0.957	-0.05*(0.07)*, 0.591
OL	0.23*(0.08)*, **0.005**	-0.53*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.07*(0.08)*, 0.591
PL	0.24*(0.08)*, **0.007**	-0.50*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.06*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.06*(0.08)*, 0.591
TL	0.25*(0.08)*, **0.005**	-0.51*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.06*(0.07)*, 0.591
CRB	0.23*(0.08)*, **0.005**	-0.54*(0.08)*, **<0.001**	0.12*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.08*(0.07)*, 0.591
BCC	0.29*(0.09)*, **0.004**	-0.45*(0.09)*, **<0.001**	0.12*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.06*(0.07)*, 0.591
GCC	0.23*(0.09)*, **0.011**	-0.47*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.06*(0.08)*, 0.591
SCC	0.28*(0.08)*, **0.004**	-0.50*(0.09)*, **<0.001**	0.14*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.06*(0.07)*, 0.591
IC	0.25*(0.08)*, **0.004**	-0.49*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.07*(0.07)*, 0.591
CP	0.16*(0.08)*, **0.047**	-0.56*(0.09)*, **<0.001**	0.10*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.08*(0.07)*, 0.591
ACR	0.30*(0.08)*, **0.004**	-0.46*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.03*(0.08)*, 0.686
PCR	0.28*(0.09)*, **0.004**	-0.47*(0.09)*, **<0.001**	0.10*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.03*(0.09)*, 0.957	-0.05*(0.08)*, 0.591
AThR	0.26*(0.08)*, **0.005**	-0.49*(0.09)*, **<0.001**	0.10*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.02*(0.09)*, 0.957	-0.06*(0.08)*, 0.591
PThR	0.26*(0.09)*, **0.005**	-0.46*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.00*(0.09)*, 0.957	-0.06*(0.07)*, 0.591
SFOF	0.25*(0.08)*, **0.005**	-0.48*(0.09)*, **<0.001**	0.08*(0.08)*, 0.294	-0.03*(0.06)*, 0.544	-0.03*(0.09)*, 0.957	-0.07*(0.08)*, 0.591
IFOF	0.24*(0.08)*, **0.004**	-0.50*(0.09)*, **<0.001**	0.09*(0.08)*, 0.237	-0.04*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.05*(0.08)*, 0.591
SLF	0.28*(0.08)*, **0.004**	-0.48*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.03*(0.09)*, 0.957	-0.04*(0.08)*, 0.591
ILF	0.20*(0.09)*, **0.019**	-0.52*(0.09)*, **<0.001**	0.10*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.07*(0.08)*, 0.591
FMAJ	0.27*(0.08)*, **0.004**	-0.49*(0.09)*, **<0.001**	0.12*(0.08)*, 0.221	-0.05*(0.06)*, 0.519	-0.01*(0.09)*, 0.957	-0.06*(0.07)*, 0.591
FMIN	0.29*(0.09)***, 0.004**	-0.47*(0.09)*, **<0.001**	0.11*(0.08)*, 0.221	-0.04*(0.06)*, 0.519	-0.03*(0.09)*, 0.957	-0.05*(0.07)*, 0.591

Notes. RGS, rapid gait speed; R_1, longitudinal relaxation rate; FDR, false discovery rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; BCC, body of corpus callosum; GCC, genu of corpus callosum; SCC, splenium of corpus callosum; IC, internal capsule; CP, cerebral peduncle; ACR, anterior corona radiata; PCR, posterior corona radiata; AThR, anterior thalamic radiation; PThR, posterior thalamic radiation; SFOF, superior fronto-occipital fasciculus; IFOF, inferior fronto-occipital fasciculus; SLF, superior longitudinal fasciculus; ILF, inferior longitudinal fasciculus; FMAJ, forceps major; FMIN, forceps minor.

The multiple regression model used is given by: RGS $\sim \beta_0 + \beta_{age} \times$ age $+ \beta_{MRI} \times$ MRI $+ \beta_{BMI} \times$ BMI $+ \beta_{sex} \times$ sex $+ \beta_{race} \times$ race $+ \beta_{MMSE} \times$ MMSE, where MRI corresponds to R_1. *Bold indicates statistical significance ($p < 0.05$).

Supplemental Table 3. Regression coefficients (standard errors) and *p*-values after FDR correction) of R_2 and age, sex, race, MMSE, and BMI with respect to RGS for each of the 21 WM ROIs investigated.

| ROIs | R_2 | | | | | |
	RGS	Age	Sex	Race	MMSE	BMI
WB	0.25*(0.09)*, **0.024**	-0.43*(0.10)*, **<0.001**	0.11*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	0.01*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
FL	0.26*(0.10)*, **0.027**	-0.42*(0.10)*, **<0.001**	0.10*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	0.00*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
OL	0.18*(0.09)*, 0.054	-0.49*(0.09)*, **<0.001**	0.11*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
PL	0.22*(0.10)*, **0.048**	-0.45*(0.10)*, **<0.001**	0.12*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.09*(0.08)*, 0.447
TL	0.22*(0.09)*, **0.029**	-0.46*(0.10)*, **<0.001**	0.10*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.07*(0.08)*, 0.447
CRB	0.18*(0.08)*, 0.054	-0.50*(0.09)*, **<0.001**	0.09*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.10*(0.08)*, 0.447
BCC	0.12*(0.09)*, 0.199	-0.51*(0.10)*, **<0.001**	0.08*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	0.01*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
GCC	0.13*(0.10)*, 0.199	-0.50*(0.10)*, **<0.001**	0.08*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	-0.00*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
SCC	0.25*(0.09)*, **0.023**	-0.46*(0.09)*, **<0.001**	0.12*(0.08)*, 0.410	-0.08*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
IC	0.21*(0.09)*, **0.047**	-0.46*(0.10)*, **<0.001**	0.08*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	-0.02*(0.09)*, 0.999	-0.07*(0.08)*, 0.447
CP	0.11*(0.08)*, 0.199	-0.54*(0.09)*, **<0.001**	0.09*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.01*(0.09)*, 0.999	-0.09*(0.08)*, 0.447
ACR	0.31*(0.09)*, **0.022**	-0.41*(0.10)*, **<0.001**	0.09*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.04*(0.08)*, 0.638
PCR	0.20*(0.10)*, 0.057	-0.47*(0.10)*, **<0.001**	0.06*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	-0.02*(0.09)*, 0.999	-0.07*(0.08)*, 0.447
AThR	0.16*(0.09)*, 0.100	-0.51*(0.10)*, **<0.001**	0.07*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	-0.02*(0.09)*, 0.999	-0.08*(0.08)*, 0.447
PThR	0.25*(0.09)*, **0.024**	-0.44*(0.10)*, **<0.001**	0.09*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.06*(0.08)*, 0.447
SFOF	0.31*(0.10)*, **0.023**	-0.39*(0.10)*, **<0.001**	0.07*(0.08)*, 0.410	-0.05*(0.06)*, 0.342	-0.02*(0.09)*, 0.999	-0.07*(0.07)*, 0.447
IFOF	0.17*(0.09)*, 0.072	-0.49*(0.10)*, **<0.001**	0.07*(0.08)*, 0.410	-0.05*(0.06)*, 0.342	-0.00*(0.09)*, 0.999	-0.07*(0.08)*, 0.447
SLF	0.27*(0.09)*, **0.023**	-0.43*(0.10)*, **<0.001**	0.11*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.00*(0.09)*, 0.999	-0.06*(0.08)*, 0.470
ILF	0.21*(0.09)*, **0.043**	-0.47*(0.10)*, **<0.001**	0.10*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.07*(0.08)*, 0.447
FMAJ	0.26*(0.09)*, **0.023**	-0.45*(0.09)*, **<0.001**	0.10*(0.08)*, 0.410	-0.07*(0.06)*, 0.342	0.02*(0.09)*, 0.999	-0.06*(0.08)*, 0.447
FMIN	0.19*(0.10)*, 0.066	-0.46*(0.10)*, **<0.001**	0.08*(0.08)*, 0.410	-0.06*(0.06)*, 0.342	-0.01*(0.09)*, 0.999	-0.08*(0.08)*, 0.447

Notes. RGS, rapid gait speed; R_2, transverse relaxation rate; FDR, false discovery rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; BCC, body of corpus callosum; GCC, genu of corpus callosum; SCC, splenium of corpus callosum; IC, internal capsule; CP, cerebral peduncle; ACR, anterior corona radiata; PCR, posterior corona radiata; AThR, anterior thalamic radiation; PThR, posterior thalamic radiation; SFOF, superior fronto-occipital fasciculus; IFOF, inferior fronto-occipital fasciculus; SLF, superior longitudinal fasciculus; ILF, inferior longitudinal fasciculus; FMAJ, forceps major; FMIN, forceps minor.

The multiple regression model used is given by: $RGS \sim \beta_0 + \beta_{age} \times age + \beta_{MRI} \times MRI + \beta_{BMI} \times BMI + \beta_{sex} \times sex + \beta_{race} \times race + \beta_{MMSE} \times MMSE$, where MRI corresponds to R_2. *Bold indicates statistical significance ($p < 0.05$).

Supplemental Table 4. Regression coefficients (standard errors) and *p*-values after FDR correction) of MWF and age, sex, race, MMSE, and BMI with respect to UGS for each of the 21 WM ROIs investigated.

ROIs	MWF					
	UGS	Age	Sex	Race	MMSE	BMI
WB	0.18*(0.10)*, 0.167	-0.30*(0.10)*, **0.005**	0.08*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.10*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**
FL	0.21*(0.10)*, 0.167	-0.28*(0.11)*, **0.011**	0.08*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.10*(0.09)*, 0.348	-0.19*(0.08)*, **0.022**
OL	0.10*(0.09)*, 0.279	-0.36*(0.10)*, **0.003**	0.07*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.22*(0.08)*, **0.020**
PL	0.15*(0.10)*, 0.219	-0.32*(0.10)*, **0.004**	0.08*(0.09)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
TL	0.12*(0.09)*, 0.231	-0.34*(0.10)*, **0.004**	0.07*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
CRB	0.19*(0.09)*, 0.167	-0.33*(0.09)*, **0.004**	0.07*(0.08)*, 0.530	-0.06*(0.06)*, 0.588	0.12*(0.09)*, 0.348	-0.22*(0.08)*, **0.020**
BCC	0.13*(0.10)*, 0.231	-0.32*(0.11)*, **0.005**	0.07*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.12*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
GCC	0.18*(0.10)*, 0.167	-0.30*(0.10)*, **0.005**	0.07*(0.08)*, 0.530	-0.03*(0.06)*, 0.588	0.10*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
SCC	0.19*(0.10)*, 0.167	-0.31*(0.10)*, **0.004**	0.10*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**
IC	0.14*(0.10)*, 0.227	-0.33*(0.10)*, **0.004**	0.06*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.10*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
CP	0.15*(0.08)*, 0.167	-0.36*(0.09)*, **0.003**	0.08*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.22*(0.08)*, **0.020**
ACR	0.24*(0.10)*, 0.167	-0.27*(0.10)*, **0.011**	0.08*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.18*(0.08)*, **0.033**
PCR	0.17*(0.10)*, 0.172	-0.31*(0.11)*, **0.005**	0.06*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.09*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**
AThR	0.16*(0.10)*, 0.172	-0.32*(0.10)*, **0.004**	0.06*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.09*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**
PThR	0.16*(0.10)*, 0.197	-0.31*(0.11)*, **0.005**	0.06*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
SFOF	0.24*(0.10)*, 0.167	-0.26*(0.11)*, **0.014**	0.05*(0.08)*, 0.530	-0.03*(0.06)*, 0.588	0.09*(0.09)*, 0.363	-0.20*(0.08)*, **0.020**
IFOF	0.12*(0.10)*, 0.231	-0.34*(0.10)*, **0.004**	0.05*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.10*(0.09)*, 0.348	-0.21*(0.08)*, **0.020**
SLF	0.12*(0.10)*, 0.249	-0.34*(0.10)*, **0.004**	0.07*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.10*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**
ILF	0.11*(0.09)*, 0.266	-0.35*(0.10)*, **0.004**	0.07*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.22*(0.08)*, **0.020**
FMAJ	0.16*(0.09)*, 0.167	-0.33*(0.10)*, **0.004**	0.08*(0.08)*, 0.530	-0.05*(0.06)*, 0.588	0.11*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**
FMIN	0.19*(0.10)*, 0.167	-0.29*(0.11)*, **0.008**	0.06*(0.08)*, 0.530	-0.04*(0.06)*, 0.588	0.09*(0.09)*, 0.348	-0.20*(0.08)*, **0.020**

Notes. UGS, usual gait speed; MWF, myelin water fraction rate; FDR, false discovery rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; BCC, body of corpus callosum; GCC, genu of corpus callosum; SCC, splenium of corpus callosum; IC, internal capsule; CP, cerebral peduncle; ACR, anterior corona radiata; PCR, posterior corona radiata; AThR, anterior thalamic radiation; PThR, posterior thalamic radiation; SFOF, superior fronto-occipital fasciculus; IFOF, inferior fronto-occipital fasciculus; SLF, superior longitudinal fasciculus; ILF, inferior longitudinal fasciculus; FMAJ, forceps major; FMIN, forceps minor.

The multiple regression model used is given by: UGS ~ $\beta_0 + \beta_{age} \times age + \beta_{MRI} \times MRI + \beta_{BMI} \times BMI + \beta_{sex} \times sex + \beta_{race} \times race + \beta_{MMSE} \times MMSE$, where MRI corresponds to MWF. *Bold indicates statistical significance (p < 0.05).

Supplemental Table 5. Regression coefficients (standard errors) and *p*-values after FDR correction) of R_1 and age, sex, race, MMSE, and BMI with respect to UGS for each of the 21 WM ROIs investigated.

ROIs	R_1					
	UGS	Age	Sex	Race	MMSE	BMI
WB	0.17*(0.09)*, 0.092	-0.34*(0.10)*, **0.001**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
FL	0.16*(0.09)*, 0.098	-0.34*(0.10)*, **0.001**	0.07*(0.08)*, 0.421	-0.04*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
OL	0.15*(0.09)*, 0.094	-0.36*(0.09)*, **0.001**	0.08*(0.08)*, 0.421	-0.04*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
PL	0.12*(0.09)*, 0.202	-0.36*(0.10)*, **0.001**	0.07*(0.08)*, 0.421	-0.04*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.22*(0.08)*, **0.016**
TL	0.19*(0.09)*, 0.091	-0.34*(0.09)*, **0.001**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
CRB	0.19*(0.08)*, 0.091	-0.37*(0.09)*, **0.001**	0.10*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.22*(0.08)*, **0.016**
BCC	0.19*(0.10)*, 0.091	-0.31*(0.10)*, **0.003**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
GCC	0.18*(0.10)*, 0.091	-0.31*(0.10)*, **0.003**	0.09*(0.08)*, 0.421	-0.04*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
SCC	0.23*(0.09)*, 0.091	-0.33*(0.09)*, **0.001**	0.11*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.20*(0.08)*, **0.016**
IC	0.19*(0.09)*, 0.091	-0.33*(0.09)*, **0.001**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
CP	0.19*(0.08)*, 0.091	-0.38*(0.09)*, **0.001**	0.09*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.22*(0.08)*, **0.016**
ACR	0.22*(0.09)*, 0.091	-0.31*(0.10)*, **0.002**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.19*(0.08)*, **0.026**
PCR	0.17*(0.09)*, 0.092	-0.33*(0.10)*, **0.001**	0.07*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
AThR	0.19*(0.09)*, 0.091	-0.33*(0.10)*, **0.001**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.20*(0.08)*, **0.016**
PThR	0.22*(0.09)*, 0.091	-0.30*(0.10)*, **0.003**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
SFOF	0.18*(0.09)*, 0.091	-0.33*(0.10)*, **0.001**	0.06*(0.08)*, 0.468	-0.02*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
IFOF	0.17*(0.09)*, 0.091	-0.34*(0.10)*, **0.001**	0.07*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.20*(0.08)*, **0.016**
SLF	0.16*(0.09)*, 0.098	-0.34*(0.10)*, **0.001**	0.08*(0.08)*, 0.421	-0.04*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.20*(0.08)*, **0.016**
ILF	0.16*(0.09)*, 0.092	-0.35*(0.09)*, **0.001**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**
FMAJ	0.21*(0.09)*, 0.091	-0.33*(0.09)*, **0.001**	0.09*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.10*(0.09)*, 0.346	-0.20*(0.08)*, **0.016**
FMIN	0.17*(0.09)*, 0.092	-0.33*(0.10)*, **0.001**	0.08*(0.08)*, 0.421	-0.03*(0.06)*, 0.687	0.09*(0.09)*, 0.346	-0.21*(0.08)*, **0.016**

Notes. UGS, usual gait speed; R_1, longitudinal relaxation rate; FDR, false discovery rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; BCC, body of corpus callosum; GCC, genu of corpus callosum; SCC, splenium of corpus callosum; IC, internal capsule; CP, cerebral peduncle; ACR, anterior corona radiata; PCR, posterior corona radiata; AThR, anterior thalamic radiation; PThR, posterior thalamic radiation; SFOF, superior fronto-occipital fasciculus; IFOF, inferior fronto-occipital fasciculus; SLF, superior longitudinal fasciculus; ILF, inferior longitudinal fasciculus; FMAJ, forceps major; FMIN, forceps minor.

The multiple regression model used is given by: UGS $\sim \beta_0 + \beta_{age} \times$ age $+ \beta_{MRI} \times$ MRI $+ \beta_{BMI} \times$ BMI $+ \beta_{sex} \times$ sex $+ \beta_{race} \times$ race $+ \beta_{MMSE} \times$ MMSE, where MRI corresponds to R_1. *Bold indicates statistical significance (p < 0.05).

Supplemental Table 6. Regression coefficients (standard errors) and *p*-values after FDR correction) of R_2 and age, sex, race, MMSE, and BMI with respect to UGS for each of the 21 WM ROIs investigated.

| ROIs | R_2 | | | | | |
	UGS	Age	Sex	Race	MMSE	BMI
WB	0.17*(0.09)*, 0.092	-0.34*(0.10)*, **0.001**	0.09*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
FL	0.16*(0.09)*, 0.098	-0.34*(0.10)*, **0.001**	0.08*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.11*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
OL	0.15*(0.09)*, 0.094	-0.36*(0.09)*, **0.001**	0.08*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
PL	0.12*(0.09)*, 0.202	-0.36*(0.10)*, **0.001**	0.10*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.13*(0.09)*, 0.341	-0.23*(0.08)*, **0.014**
TL	0.19*(0.09)*, 0.091	-0.34*(0.09)*, **0.001**	0.08*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
CRB	0.19*(0.08)*, 0.091	-0.37*(0.09)*, **0.001**	0.07*(0.08)*, 0.569	-0.06*(0.06)*, 0.533	0.13*(0.09)*, 0.341	-0.24*(0.08)*, **0.014**
BCC	0.19*(0.10)*, 0.091	-0.31*(0.10)*, **0.003**	0.06*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
GCC	0.18*(0.10)*, 0.091	-0.31*(0.10)*, **0.003**	0.06*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.10*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
SCC	0.23*(0.09)*, 0.091	-0.33*(0.09)*, **0.001**	0.10*(0.08)*, 0.569	-0.06*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.21*(0.08)*, **0.014**
IC	0.19*(0.09)*, 0.091	-0.33*(0.09)*, **0.001**	0.06*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.10*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
CP	0.19*(0.08)*, 0.091	-0.38*(0.09)*, **0.001**	0.08*(0.08)*, 0.569	-0.06*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.23*(0.08)*, **0.014**
ACR	0.22*(0.09)*, 0.091	-0.31*(0.10)*, **0.002**	0.08*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.13*(0.09)*, 0.341	-0.17*(0.08)*, **0.036**
PCR	0.17*(0.09)*, 0.092	-0.33*(0.10)*, **0.001**	0.05*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.09*(0.09)*, 0.341	-0.21*(0.08)*, **0.014**
AThR	0.19*(0.09)*, 0.091	-0.33*(0.10)*, **0.001**	0.05*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.10*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
PThR	0.22*(0.09)*, 0.091	-0.30*(0.10)*, **0.003**	0.06*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.21*(0.08)*, **0.015**
SFOF	0.18*(0.09)*, 0.091	-0.33*(0.10)*, **0.001**	0.05*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.09*(0.09)*, 0.342	-0.21*(0.08)*, **0.014**
IFOF	0.17*(0.09)*, 0.091	-0.34*(0.10)*, **0.001**	0.05*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.11*(0.09)*, 0.341	-0.21*(0.08)*, **0.015**
SLF	0.16*(0.09)*, 0.098	-0.34*(0.10)*, **0.001**	0.08*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.11*(0.09)*, 0.341	-0.20*(0.08)*, **0.015**
ILF	0.16*(0.09)*, 0.092	-0.35*(0.09)*, **0.001**	0.08*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.12*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**
FMAJ	0.21*(0.09)*, 0.091	-0.33*(0.09)*, **0.001**	0.08*(0.08)*, 0.569	-0.05*(0.06)*, 0.533	0.13*(0.09)*, 0.341	-0.20*(0.08)*, **0.015**
FMIN	0.17*(0.09)*, 0.092	-0.33*(0.10)*, **0.001**	0.06*(0.08)*, 0.569	-0.04*(0.06)*, 0.533	0.10*(0.09)*, 0.341	-0.22*(0.08)*, **0.014**

Notes. UGS, usual gait speed; R_2, transverse relaxation rate; FDR, false discovery rate; WM, white matter; ROI, region-of-interest; WB, whole brain; FL, frontal lobe; OL, occipital lobe; PL, parietal lobe; TL, temporal lobe; CRB, cerebellum; BCC, body of corpus callosum; GCC, genu of corpus callosum; SCC, splenium of corpus callosum; IC, internal capsule; CP, cerebral peduncle; ACR, anterior corona radiata; PCR, posterior corona radiata; AThR, anterior thalamic radiation; PThR, posterior thalamic radiation; SFOF, superior fronto-occipital fasciculus; IFOF, inferior fronto-occipital fasciculus; SLF, superior longitudinal fasciculus; ILF, inferior longitudinal fasciculus; FMAJ, forceps major; FMIN, forceps minor.

The multiple regression model used is given by: UGS ~ $\beta_0 + \beta_{age} \times$ age $+ \beta_{MRI} \times$ MRI $+ \beta_{BMI} \times$ BMI $+ \beta_{sex} \times$ sex $+ \beta_{race} \times$ race $+ \beta_{MMSE} \times$ MMSE, where MRI corresponds to R_2. *Bold indicates statistical significance ($p < 0.05$).